

AMENDMENTS TO THE CLAIMS:

Please cancel claims 2-4, 8-9 and 11, without prejudice. This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method for constructing a mammalian tissue or a fragment thereof in vitro, comprising:
 - (a) culturing and propagating embryonic epithelial-derived explants, tissue or cells comprising:
 - (i) isolating the tissues or cells and growing them in culture,
 - (ii) permitting the tissue or cells to form multiple branches,
 - (iii) dissecting out individual branch tips,
 - (iv) culturing the individual branch tips in the presence of nutrient medium, serum, at least one growth factor, and BSN-conditioned medium (BSN-CM) on an extracellular matrix (ECM) gel for several generations to generate branch tip buds;
 - (b) culturing and propagating isolated embryonic or fetal metanephric mesenchyme comprising:
 - (i) dissecting out embryonic or fetal metanephric mesenchyme at the time of induction,
 - (ii) culturing the embryonic or fetal metanephric mesenchymal tissue in the presence of nutrient medium, serum, at least one growth factor, and BSN-CM,
 - (iii) partitioning mesenchyme into multiple pieces and culturing each piece separately, and
 - (iv) inducing vasculogenesis by subjecting cultured mesenchyme to substrate deprivation or addition of soluble growth factors;
 - (c) combining each vascularized mesenchyme with each cultured branch tip bud in a matrix in which in vitro angiogenesis has begun such that the mesenchyme and tip bud are in close contact; and

(d) culturing the combined tissue under conditions to ensure continued cell growth to obtain a vascularized mammalian tissue, wherein the at least one growth factor comprises glial cell line-derived neurotrophic factor (GDNF).

Claims 2-4. (Canceled)

5. (Previously Presented) The method according to claim 1, wherein the at least one growth factor comprises a glial cell line-derived neurotrophic factor and at least one other growth factor selected from the group consisting of EGF, HGF, IFG, and FGF-2.

6. (Canceled)

7. (Currently Amended) The method according to claim 1, wherein the extracellular matrix gel comprise a mixture of type I collagen and a basement membrane preparation.

Claims 8-9. (Canceled).

10. (Previously Presented) The method according to claim 1, wherein the vascularized mammalian tissue is implanted into a recipient without prior induction of vasculogenesis.

11. (Canceled)

12. (Previously Presented) The method of claim 1, wherein the vascularized mammalian tissue is mammalian kidney tissue.